Space Weather Forecast

Issued on Wednesday, 20 October 2021 at 01:09 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

---

Space Weather Forecast Headline: No significant activity expected.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity was Very Low, with just very minor flare activity. The one numbered region on the visible disc at present consists of a single modest size mature spot located in the far southeast quarter. It appears to be stable with no notable flares during the period.

No Earth-directed CMEs (coronal mass ejections) were observed in available imagery at the time of issue. However, a faint CME that was observed leaving the sun from the northern hemisphere on the 17th has been re-analysed. Model results show a possible small chance of a weak side glance around 20/2300UTC, but confidence is low and no significant impacts are expected.

Solar Wind / Geomagnetic Activity: The solar wind speed was at mainly slow levels over the past 24 hours. The total magnetic field was mostly weak, but with a few brief moderate intervals. The important north-south component had several short periods of weak southward deflection. Resultant geomagnetic activity was Quiet to Unsettled (Kp 1-3), with a period of Active (Kp 4) 19/1500-2100UTC.

Energetic Particles / Solar Radiation: No solar radiation storms were observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity is expected to remain at Very Low levels during the forecast period, with only a slight chance of Common class flares.

Solar Wind / Geomagnetic Activity: Solar wind speeds are expected to begin day 1 (20th) at mainly background levels. However, the solar wind is likely to become enhanced at times during days 1 and 2 (20th and 21st) due to influence from a coronal hole in the southwest quadrant of the visible disc. Geomagnetic activity is likely to be Quiet to Unsettled, with isolated Active intervals, and a slight chance of isolated G1 minor geomagnetic storms on days 1 and 2. Coronal hole influence is expected to gradually wane through days 3 and 4 (22nd and 23rd), with geomagnetic activity returning to mostly Quiet levels.

Energetic Particles / Solar Radiation: No solar radiation storms are expected.

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

© Crown Copyright 2021. All Rights Reserved.

Met Office Space Weather Forecast

Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	10	10	5	1
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	1	1	1	1
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	1	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

© Crown Copyright 2021. All Rights Reserved.